

08CS5682-1

REMARKS

Claims 1-22 are pending in the present Application. Claims 1, 16, 19, and 21 have been amended, leaving Claims 1-22 for consideration upon entry of the present Amendment. No new matter has been introduced by way of amendment. For example, support for the amendment to Claims 1, 16, 19, and 21 regarding applying shear during compounding can be found at least in paragraph [0030] of the Specification as originally filed.

Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 102(b)

Claim 1 stands rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 4,404,303 to Thomas (hereinafter "Thomas"). Applicants respectfully traverse this rejection.

Currently amended independent Claim 1 is directed to a process for producing a fire resistant polycarbonate composition, comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding.

Thomas is generally directed to carbonate polymers containing a thermally stable barbituate in an amount sufficient to render the polycarbonate composition fire retardant.

In making the rejection, the Examiner has taken the position that that spraying an aqueous solution of a fire retardant onto a dry particulate of the polycarbonate is the same thing as compounding an aqueous solution of a flame retardant salt with a polycarbonate composition because compounding means mixing, blending or combining, and that "it is therefore immaterial whether such a mixture is brought about by spraying a solution onto dry particles or by just bringing together the solution and dry particles". To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Variant Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Thomas fails to anticipate Applicants' independent Claim 1 because there is no mention of "compounding an aqueous solution of a flame retardant salt with a polycarbonate

08CS5682-1

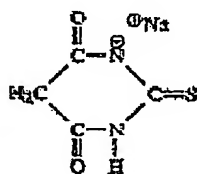
composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding".

Once again, the Examiner's attention is respectfully directed to the text of Thomas, the relevant portions of which have been reproduced for convenience as shown below.

The fire retardant polycarbonate of the present invention is suitably prepared by combining the carbonate polymer with an effective amount of salt using any one of a variety of blending procedures conventionally employed for incorporating additives into carbonate polymer resins. For example, dry particulates of the carbonate polymer and the barbituate may be dry blended and the resulting dry blend extruded into the desired shape. More preferably, an aqueous solution of the barbituate is sprayed onto a dry particulate of the carbonate polymer and then molded or extruded into the desired shape.

(Thomas, Column 3, lines 36-47, emphasis added)

To a 2000-g sample of a homopolycarbonate of bisphenol-A, having a weight average molecular weight (Mw) of 32,000 as determined by gel permeation chromatography and sold under the trade name, Merlon M50F- 1000 by Mobay Chemical, in the form of pellets [0.32 cm (dia)×0.32 cm (length)] is added 0.20 g of sodium 2-thiobarbituate:



An aqueous solution of the salt is combined with the polycarbonate by spraying it onto the polycarbonate pellets which have been preheated to 250° F. The sprayed pellets are then dried at 250° F. for 4 hours. The resultant blend is extruded and repelletized in a single screw extruder equipped with a static mixer and operating at 525° F. The extruded pellets are redried at 250° F. for up to 4 hours. These redried pellets are molded into test bars (12.7 cm×1.27 cm×0.32 cm) using a screw type injection molding unit wherein the molding temperature is 575° F.

(Thomas, Column 3, line 67 through Column 4, line 22, emphasis added)

The only disclosure, in Thomas, of an aqueous solution of a fire retardant is one that is sprayed onto a dry particulate of the polycarbonate and then subsequently molded or extruded into

08CS5682-1

a shaped article. Alternatively, the sprayed aqueous solution of the fire retardant is dried prior to being molded or extruded into a shaped article. Neither of these options provide for the application of shear while compounding an aqueous solution of a flame retardant salt with a polycarbonate composition as presently claimed.

For at least these reasons, Applicants respectfully request withdrawal of the rejection of currently amended independent Claim 1.

First Claim Rejection Under 35 U.S.C. § 103(a)

Claims 1, 16, 19, and 21 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Thomas. Applicants respectfully traverse this rejection.

Currently amended independent Claims 1, 16, 19, and 21 are directed to processes relating to fire resistant polycarbonate compositions comprising, *inter alia*, compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding.

Thomas is discussed above.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Applicants assert that a *prima facie* case of obviousness has not been established because the cited reference fails to teach or suggest all elements of Applicants' claims. As discussed in the Claim Rejections Under 35 U.S.C. § 102(b) above, Thomas discloses and suggests spraying

08CS5682-1

an aqueous solution onto dry particulates of a carbonate polymer followed by drying the aqueous solution. As discussed in the previous response dated January 31, 2005, Thomas also discloses dry blending particulates of the fire retardant and the polycarbonate. Thus, Thomas does not disclose or suggest at least compounding an aqueous solution of a flame retardant salt with a polycarbonate composition, wherein shear is applied during the compounding.

Accordingly, Applicants respectfully request withdrawal of the rejection applied to Claims 1, 16, 19, and 21.

Second Claim Rejection Under 35 U.S.C. § 103(a)

Claims 2-5, 7-10, 12, 14, 15, 17, 20, and 22 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Thomas in view of US Patent No. 7,735,978 to Ishihara et al. (hereinafter "Ishihara"). Applicants respectfully traverse this rejection.

Claims 2-5, 7-10, 12, 14, 15, 17, 20, and 22 depend from, and include all of the features, of their respective base claims (i.e., Claims 1, 16, 19, and 21). Thus, Claims 2-5, 7-10, 12, 14, 15, 17, 20, and 22 include at least the feature "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding". The cited references fail to establish a *prima facie* case of obviousness because the cited references fail to teach or suggest, individually or in combination, at least this feature.

Thomas' failure to teach or suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding" is well documented in both the Claim Rejections Under 35 U.S.C. § 102(b) and the First Claim Rejection Under 35 U.S.C. § 103(a) above.

Ishihara is generally directed to a flame retardant polycarbonate composition. The polycarbonate composition generally includes, in admixture, an aromatic polycarbonate resin, an ortho-methyl substituted aromatic dihydroxy compound, and an additional flame retardant

08CS5682-1

additive, with the ortho-methyl substituted aromatic dihydroxy compound and the additional flame retardant additive being present in an amount sufficient to improve flame resistance.

Like Thomas in part, Ishihara discloses and suggests dry blending a flame retardant with a polycarbonate composition. In fact, there is no disclosure or suggestion of an aqueous solution of a flame retardant composition anywhere in Ishihara. Consequently, Ishihara fails to compensate for the deficiencies of Thomas.

In view of the foregoing, Applicants respectfully request withdrawal of the rejection applied to Claims 2-5, 7-10, 12, 14, 15, 17, 20, and 22.

Third Claim Rejection Under 35 U.S.C. § 103(a)

Claim 6 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Thomas in view of Ishihara, and further in view of US Patent No. 6,518,347 to Boyd et al. (hereinafter "Boyd"). Applicants respectfully traverse this rejection.

Claim 6 depends from Claim 1 and, as such, is directed to a process for producing a fire resistant polycarbonate composition comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding.

As previously discussed, any combination of Thomas with Ishihara that is used to render Claim 1, and by extension Claim 6, obvious cannot be relied upon. Consequently, any additional prior art (e.g., Boyd), must compensate for the deficiencies of Thomas and Ishihara.

Boyd is directed to a flame retardant carbonate polymer composition. The carbonate polymer contains a flame retardant additive comprising metal salts of a highly fluorinated methide, amide, or imide anion, of which potassium perfluorobutane sulfonate is disclosed. As noted in Boyd, "shaped articles (e.g., molded, cast or extruded articles) of this invention can be made, e.g., by blending or otherwise uniformly mixing an effective amount of the additive and the polymer, for example by intimately mixing the additive with pelletized or powdered polymer, and

08CS5682-1

melt extruding the mixture into shape articles....". As such, like Thomas and Ishihara above, Boyd teaches and suggests compounding by dry blending the ingredients.

None of the cited references teach or suggest applying shear while compounding an aqueous solution of a flame retardant salt with a polycarbonate composition, wherein shear is applied during the compounding.

Accordingly, Applicants respectfully request the rejection applied to Claim 6 be withdrawn.

Fourth Claim Rejection Under 35 U.S.C. § 103(a)

Claim 11 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Thomas in view of Ishihara, and further in view of U.S. Patent No. 6,174,944 to Chiba et al. (hereinafter "Chiba"). Applicants respectfully traverse this rejection.

Claim 11 depends from Claim 1 and, as such, is directed to a process for producing a fire resistant polycarbonate composition comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding.

Chiba is directed to flame retardant polycarbonate resin compositions, which contain, among others, additive components of fibrous fillers, surface-treating agents, and inorganic fillers. As noted in Chiba, "the method for producing the polycarbonate resin composition by mixing components (a) to (f) is not specifically defined, and any ordinary method is employable for producing it." As such, Chiba fails to compensate for the deficiencies of the other references. That is, Chiba, like the other references, fails to teach or suggest applying shear while compounding an aqueous solution of a flame retardant salt with a polycarbonate composition, as claimed by Applicants.

Applicants respectfully request withdrawal of the rejection applied to Claim 11.

08CS5682-1

Fifth Claim Rejection Under 35 U.S.C. § 103(a)

Claims 13 and 18 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Thomas in view of Ishihara, and further in view of U.S. Patent No. 4,154,692 to McElveen (hereinafter "McElveen"). Applicants respectfully traverse this rejection.

Claims 13 and 18 depend from Claims 1 and 16 respectively. Accordingly, these claims include the feature "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein shear is applied during the compounding".

McElveen is directed to flame retardant solutions containing water and alcohol, and processes for making flame retardant fabrics and fibers, specifically cellulose acetate and cellulose triacetate, by immersing the fabrics or fibers in the flame retardant solutions.

McElveen relies on the absorptive properties of the fabric to incorporate the flame retardant. A combination of these references would ultimately result in treating Thomas and/or Ishihara's polycarbonate compositions by immersing them into a flame retardant solution as taught by McElveen. Consequently, the references, individually or in combination, fail to teach or suggest applying shear while compounding an aqueous solution of a flame retardant salt with a polycarbonate composition as claimed by Applicants.

Accordingly, Applicants request withdrawal of the rejection to Claims 13 and 18.


08CS5682-1

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862.

Respectfully submitted,

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